BPS/02

29 July 1981

MEMORANDUM FOR: Chief, Building Planning Staff, OL

FROM: Chief, Systems Analysis Branch, EO/OL

SUBJECT: System Requirements for Building Planning Staff

1. We are pleased to submit, for your approval, the attached Requirements Study for an automated system for the Building Planning Staff. This STAT Study was prepared by [   ] based on information supplied by members of your staff.

2. If you would like SAB to proceed with a Project Proposal for the system as outlined in the recommendation, please sign below and return the original copy.

3. If you have any questions concerning the study or the data used to prepare it, please call [   ]   STAT

                                                                        STAT

Att:

CONCURRENCE: OL 1 3170

                                      3 AUG 1981

STAT [   ]   _____
      Chief, Building Planning Staff, OL   DATE

1.0 Introduction

1.1 Background

This study is in response to a request from the Building Planning Staff (BPS), Office of Logistics, to Systems Analysis Branch (SAB), Office of Logistics, for support in establishing an automated system that will assist BPS in determining space requirements for a proposed consolidation of Agency Metropolitan Washington area facilities.

This study contains a problem statement, requirements definition, discussion of alternative solutions, and a recommendation for an automated system consistent with the objectives of BPS.

1.2 Missions and Objectives

BPS was established under the direction of the Director of Logistics and given responsibility for collecting the facilities requirements for Agency components, developing a coordinated plan for consolidation of those facilities, conducting conceptual facility design studies leading to construction specifications, and initiating budgetary and programmatic actions necessary to achieve consolidation.

BPS will provide a chair-person for the Agency Building Planning Committee which consists of representatives from the Office of the DCI and each of the directorates. The representatives will be responsible for identifying facilities requirements to the BPS and will serve as coordinating officers for the operating elements of the BPS.

2.0 Problems

The problem faced by the BPS is in the determination of space requirements for consolidation of Agency Metropolitan Washington facilities. Federal Property Management Regulations (FPMRs) dictate the amount of office and desk space allocable to a given position based on the authorized grade level of that position. Therefore, BPS must identify the positions and authorized grade levels of those positions which will be consolidated and aggregate them by Directorate, Office, Division, and Component in order to determine the office space required. Currently, there is no automated system that will assist BPS in performing these calculations.

Another area of concern for BPS is special use areas such as conference rooms, laboratories, and computer rooms. The space requirements for these special use areas are not determined by staffing complement or authorized grade level of any position, but are determined on the basis of operational requirements. An inventory of this type of area along with special requirements

such as HVAC, special power requirements, chilled water, etc. must
be created and maintained. Again, there is no automated system
available today which contains this information.

3.0 User Requirements

In order to meet the stated objectives of the BPS, an
automated system with the following capabilities is required.

3.1 Data Files

The system will be composed of two major files; one file
containing normal office space requirements and one file
containing special use space requirements. The format of these
files is as follows:

Office File

Data Element	Length	Type	Description
DIR	2	AN	Two Digit Code for Directorate and Office *
DIV	5	AN	Division
BR	5	AN	Branch or Division
TITLE	20	AN	Position Title (Clerk-Typist, etc.)
SCHED	4	AN	Schedule of Position (GS,WB,GP,SIS,etc.)
GRADE	2	AN	Grade
INCUM	3	N	Allowable Personnel Assigned to Position
MODE	2	AN	Reserved Field For Use In Computation of Non-Standard Space Requirements such as Equipment Operators
PER-CAP	3	N	Square Feet Allocable to One Incumbent (From FPMRs)
TOT-SPACE	4	N	Toal Square Feet For All Incumbents
COMMENT	30	AN	Free Field for Comments

* Although only the two digit code for Directorate and Office will be stored in the file, a translate table will enable users to query the system based on an expanded clear text definition for Directorate and/or Office.

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The data necessary to build this file is available from the Office of Personnel's Staffing Complement. We expect approximately [   ] records to be resident in this file and project little or no growth. Periodically, the data in this file will be erased and the file will be reloaded with the latest OP Staffing Complement. This data (DIR, DIV, BR, TITLE, SCHED, and GRADE) will be in the form of a GIMS Extract Tape and will require a PL/1 program to calculate the fields INCUM, PER-CAP, and TOT-SPACE. MODE and COMMENTS fields will be added by BPS via an input menu. The program that will reload the file must first extract all records containing the MODE and COMMENTS fields from the old file and reload them with the appropriate new record. If no match can be found for records previously extracted, the program will add these records to the data base and report them on an exception listing. BPS will then decide if these records are valid or if they should be deleted from the data base.

Special Use File

Data Element	Length	Type	Description
DIR	2	AN	Two Digit Code for Directorate and Office *
DIV	5	AN	Division
BR	5	AN	Branch or Staff
TYPE	3	AN	Code for Type of Facility (Laboratory, Conference Room, etc.)
AREA	5	N	Area in Square Feet
CEIL	2	N	Ceiling Height in Feet
POWER	14	AN	Special Power Requirements
HVAC	14	AN	HVAC Requirements
COMMENTS	30	AN	Free Field for Comments

* Although only the two digit code for Directorate and Office will be stored in the files, a translate table will enable users to query the system based on an expanded clear text definition for Directorate and Office.

STAT   We anticipate no more than ⬚ records will reside in this file. This file must be built manually through input transactions.

3.2 Input

Input to the system should be through pre-defined menus for user convenience. All editing of data should be performed at the time of input, and informatory messages stating the action taken or any errors detected must be displayed on the terminal screen. The types of input expected are additions of new records to the data base, modification of existing records, and deletion of certain data elements or entire records. The number of inputs to the system should be relatively low after initial loading of the data base has been accomplished.

3.3 Output

The system must be designed to generate formatted reports upon demand. The time frame for report generation is not considered critical, and overnight processing is acceptable. It is desirable that the reports be printed on a high quality device with a convenient paper size (8 1/2 X 11).

3.4 Queries

The system must be designed to support a high volume of on-line queries against the data base. The system must have the ability to suppress printing of any data element, sort the output to user specifications, and perform mathematical functions such as multiplication, division, totaling, and sub-totaling. Additionally, the output from any query should be displayed on the terminal screen and the user must have the capability of optionally directing the output to a hard copy printer. The query language used must be English-like and easy to learn for personnel with little or no computer background.

4.0 Alternatives

The following alternatives have been explored in order to determine their compatibility with the BPS' stated objectives and requirements.

4.1 RAMIS

RAMIS is an on-line data base management system available to users of the ODP computer systems through VM/370. This system is generally used for small applications requiring on-line update and query capability. The file structuring concept employed by RAMIS allows for economical storage of data by eliminating redundant data wherever possible. The query language of RAMIS is very English-like and is easy for the user to learn. The major disadvantage of RAMIS is that only one user may access the data base at any given time.

A RAMIS system will meet the query and reporting requirements of BPS, but will not support the input requirements

in the RAMIS environment. However, the RAMIS Program Interface (RPI) feature allows the user to access RAMIS with a high level program language such as PL/1 which may be used to generate input menus and edit the input values. The RPI feature may also be used to generate formatted reports which may be tailored more closely to user specifications through a high level programming language. This type of a system will meet all of the objectives of BPS.

4.2 GIMS

GIMS is another on-line data base management system available to users of the ODP computer systems. GIMS is generally used for large data base applications requiring large amounts of data stored in multiple files, many users simultaneously performing dissimilar functions, heavy input/output requirements, and complex intra-file and inter-file data relationships. The query language associated with GIMS is relatively easy for the user to learn, however, it may become quite complex depending on the data relationships.

GIMS will meet all of the requirements of BPS, however, a GIMS system is more complex than is required for this application.

4.3 INFO

INFO is an on-line data base system available to users of the ODP VM/370 system. INFO is best suited for multi-file applications with files which do not exceed 3,000 records. INFO capabilities include menu generation, file creation, report creation, sort, and a query language. INFO is very easy to learn and use. It is currently being used within the Office of Logistics by OL employees to generate several small applications.

An INFO system will meet all of the requirements stated by BPS.

4.4 VM/370

VM/370 is the ODP interactive computer system that allows the user to edit files and execute programs in either the on-line or off-line (BATCH) environment. The VM/370 system has no query language and all data is stored in non-related files. In the VM/370 environment all data manipulation and reporting is accomplished by executing programs in either the on-line or off-line mode.

VM/370 will not meet the requirements of BPS since no query language is available.

5.0 Conclusion

After reviewing the above alternatives, we have determined that either a GIMS, INFO, or RAMIS data base management system will satisfy the requirements of BPS and provide for expansion as necessary. As stated previously, BPS does not require a system with all the capabilities and complexities of GIMS. RAMIS and INFO provide approximately the same capabilities; however, an INFO system will be much easier to implement and support. A RAMIS system will require an ADP professional to build and maintain the data base and PL/1 programs. An INFO system will only require an ADP professional during the initial design. Based on its simplicity, INFO is recommended over GIMS and RAMIS as the system which will provide the flexibility required and enable BPS to meet their objectives in the most timely and cost-effective manner.